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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/674,477  | 11/01/2000  | Andre Cesar Baeck    | CM1762M/VB          | 1249             |
| 27752   | 7590        | 06/03/2004           | EXAMINER            |                  |
| THE PROCTER & GAMBLE COMPANY<br>INTELLECTUAL PROPERTY DIVISION<br>WINTON HILL TECHNICAL CENTER - BOX 161<br>6110 CENTER HILL AVENUE<br>CINCINNATI, OH 45224 |             |                      | RAO, MANJUNATH N    |                  |
|   |             | ART UNIT             | PAPER NUMBER        |                  |
|   |             | 1652                 |                     |                  |
| DATE MAILED: 06/03/2004   |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                     |                     |
|------------------------------|-------------------------------------|---------------------|
| <b>Office Action Summary</b> | <b>Application No.</b>              | <b>Applicant(s)</b> |
|                              | 09/674,477                          | BAECK ET AL.        |
|                              | Examiner<br>Manjunath N. Rao, Ph.D. | Art Unit<br>1652    |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 09 March 2004.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,2,16 and 26-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,2,16 and 26-28 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

Claims 1, 2, 16, 26-28 are currently pending and present for examination in this application.

Applicants' amendments and arguments filed on and that filed on 3-9-04, have been fully considered and are deemed to be persuasive to overcome the rejections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. Specifically Examiner has withdrawn the rejection of claims under 35 U.S.C. 112, 2<sup>nd</sup> paragraph in view of claim amendments.

### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in PCT US 98/08857 on 1-5-1998. It is noted, however, that applicant has not filed a certified copy of the priority application as required by 35 U.S.C. 119(b). Therefore, Examiner has not granted the benefit of foreign priority to the instant application.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Sakka et al. (Ann NY Acad. Sci., Dec 1998, Vol. 864:485-488). This rejection is based upon the public availability

of a printed publication. Claim 1 of the instant application are drawn to a fabric-softening protein hybrid comprising an amino acid sequence comprising a cellulose binding domain (CBD) linked to a fabric softening protein wherein said fabric softening protein is linked to said amino acid sequence comprising CBD, via an amino acid and/or non-amino acid linking region, wherein the CBD is selected from a group of CBDs consisting of the CBDs from *Clostridium stercorarium* XynA. Sakka et al. disclose such a hybrid protein comprising a cellulose binding domain of *Clostridium stercorarium* XynA, linked to a softening protein (endoglucanase) via an amino acid linker. Therefore Sakka et al. anticipate claim 1 of this application as written.

In response to the previous Office action, applicants have traversed the above rejection arguing they have amended claim 1 to recite specific group of softening proteins from which the softening protein is selected. Applicants argue that said group of proteins comprising softening protein in claim 1 does not include the softening protein disclosed by Sakka et al. and therefore the reference does not anticipate claim 1. Examiner respectfully disagrees with such an argument. This is because, the amended claim 1 includes broad group of enzymes of which “hydrolases” is one and the endoglucanase enzyme disclosed by Sakka et al. as softening protein falls under the group “hydrolases”. Therefore, contrary to applicant’s argument, the reference of Sakka et al. does anticipate claim 1 as written. Next applicants argue that the reference used in the rejection is post-dated to the priority date of the instant application and that they will submit the foreign priority document in order to perfect the priority date. However, Examiner has still not received the priority document and therefore, the above rejection is maintained until such time applicants perfect the priority date.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 16, 21, 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulein et al. (WO 94.07998, April 1994, cited in IDS) or Gilkes et al. (WO 93/05226, 18 Mar 1993, cited in IDS) and Goldstein et al. (J. Bacteriology, 1993, Vol. 175(18):5762-5768) and the high level of knowledge existing in the art of making detergent compositions. Claims 1, 2, and 16, 21, 26-28 are drawn to a hybrid protein comprising a cellulose binding domain linked through an amino acid linker to an active/inactive protein, wherein the CBD is selected from *C.cellulovorans*. and fabric care composition comprising the same (claim 2).

Schulein et al. provides a hybrid protein comprising a CBD obtained from *H.insolens* linked to a softening protein through an amino acid linker and Gilkes et al. teach methods of making such hybrid protein by making use of at least two CBDs from *C.fimi* and a softening protein which is inactive or active (see pages 5 through 9) and their use in fabric care compositions. However, the references do not teach the use or specific construction of a hybrid protein comprising CBD obtained from *C.cellulovorans* linked to a softening protein through an amino acid or non-amino acid linker region such as that described in claim 16 of the instant application and/or its use in fabric care composition.

Goldstein et al. characterize the CBD from *C.cellulovorans*. The reference teaches that *C.cellulovorans* produces the CBD as a non-enzymatic independent protein and mediates the

Art Unit: 1652

interaction of the cellulase and CBD bound to the cellulose. The reference also teaches that said CBD bound specifically to crystalline cellulose such as those found in cotton fibers.

Armed with the teaching of Schulein et al., or Gilkes et al. to construct hybrid proteins comprising a CBD isolated from other sources and their use in making detergent compositions, it would have been obvious to those skilled in the art to construct or make a similar hybrid protein using the CBD obtained from *C.cellulovorans* as taught by Goldstein et al. instead of the CBD obtained from any other source. Goldstein et al. teach that the CBD of *C.cellulovorans* has high capacity to bind specifically to crystalline cellulose. Using this information along with other general information common in the art of detergent composition, it would have been obvious to one of ordinary skill in the art to develop a hybrid protein comprising a CBD from *C.cellulovorans* for use in fabric care composition. One of ordinary skill in the art would have been motivated to do so in order to make such compositions for exclusive use on cotton fabrics and improve the efficiency of the existing detergent compositions used for cotton fabrics. One of ordinary skill in the art would have a reasonable expectation of success as Schulein et al. and Gilkes et al. provide a step by step method for construction of a hybrid protein, and Goldstein et al. provide another source for a specific CBD that can exclusively target cotton fabrics. On similar lines, Examiner also takes the position that using the techniques taught by Gilkes et al. or Schulein et al. it would have been indeed obvious to those skilled in the art to pick and choose any CBD available in the prior art, depending on the characteristics of said CBDs and depending on the end use of said hybrid proteins and construct or make hybrid proteins for a variety of uses.

Therefore, the above claims would have been *prima facie* obvious to one of ordinary skill in the art.

In response to the previous Office action, applicants traverse the above rejection arguing again that amended claim 1 is drawn to specific softening proteins and such specific softening proteins are neither suggested nor taught in the references used in the above rejection. Examiner respectfully disagrees with such an argument. This is because, the amended claim 1 includes broad group of enzymes of which “hydrolases” is one, and the endoglucanase enzyme disclosed by Schulein et al. as softening protein falls under the group “hydrolases”. Therefore, contrary to applicant’s argument, the reference does teach and suggest the use of a hydrolase as the softening protein. Furthermore, as argued above and before, it would be well within the skill of those artisans in the art of detergents to pick and choose any enzyme or polypeptide as a softening protein as there is no requirement that said protein must be catalytically active. Therefore, Examiner continues to take the position that above claims would have been *prima facie* obvious to one of ordinary skill in the art and maintains the rejection.

### ***Double Patenting***

Claims 1, 2, 16, 26-28 are directed to an invention not patentably distinct from claims 1,6-12, 38 of commonly assigned US 6,410,498 B1 or claims 1-8 of US 6,468,955 B1 or claims 1-8 of US 6,465,410 B1. Specifically, claims 1, 2, 16, 26-28 are drawn to a hybrid protein called as fabric softening protein comprising an amino acid sequence comprising a CBD linked to another polypeptide called as fabric softening protein wherein the linkage is through amino acid or non-amino acid linkage and wherein the CBDs are selected from a group consisting of

Art Unit: 1652

CBD cellulozome from *Cl.cellulovorans*, CBD E3 from *T.fusca*, CBD dimmer from *Cl.stecorarium* XynA, CBD from *B.agardherens* and combinations thereof and wherein the linked polypeptides comprises a protein selected from a group consisting of hydrolases, oxidoreductases, transferases, cellulases etc. and wherein such hybrid protein is used in a detergent composition for detergent and fabric softening or treatment purposes. Claims 1,6-12, 38 of commonly assigned US 6,410,498 B1 or claims 1-8 of US 6,468,955 B1 or claims 1-8 of US 6,465,410 B1 also appear to be drawn to similar or identical inventions comprising a hybrid protein comprising a CBD and a polypeptide linked through a amino acid or non-amino acid linkage. Assignee is required to either (a) name first inventor of conflicting subject matter under 102(f) or (g) or (b) show inventions were commonly owned at the time of applicant's invention.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2, 16, 26-28 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,6-12, 38 of commonly assigned US 6,410,498 B1 or claims 1-8 of US 6,468,955 B1 or claims 1-8 of US 6,465,410 B1. An obviousness-type double patenting rejection is appropriate where the conflicting claims are not

Art Unit: 1652

identical, but an examined application claim is not patentably distinct from the reference claim, because the examined claim is either anticipated by, or would have been obvious over the reference claim. See, e.g., *In re Berg*, 140 F.3d 1428,46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi* 759 F.2d 887,225 USPQ 645 (Fed. Cir. 1985). Although the conflicting claims are not identical, they are not patentably distinct from each other. Claims 1, 2, 16, 26-28 of the instant application and claims 1,6-12, 38 (US 6,410,498 B1) or claims 1-8 (US 6,468,955 B1) or claims 1-8 (US 6,465,410 B1) of the reference patent are both directed to hybrid proteins (called by different names) comprising an amino acid sequence comprising a CBD linked to another polypeptide called as wherein the linkage is through amino acid or non-amino acid linkage and wherein the CBDs are selected from a group consisting of CBD cellulozome from *Cl.cellulovorans*, CBD E3 from *T.fusca*, CBD dimer from *Cl.stecorarium* XynA, CBD from *B.agardherens* and combinations thereof and wherein the linked polypeptides comprises a protein selected from a group consisting of hydrolases, oxidoreductases, transferases, cellulases etc. and wherein such hybrid protein is used in a detergent composition for detergent and fabric softening or treatment purposes.

The portion of the specification (and the claims) in the reference patent that supports the recited hybrid proteins includes several embodiments that would anticipate the hybrid protein claimed in claims herein. Claims of the instant application listed above cannot be considered patentably distinct over claims of the reference patents when there is specifically recited embodiment that would anticipate mainly the of the instant application. Alternatively, claims of the instant application cannot be considered patentably distinct over claims of the reference patents when there is specifically disclosed embodiment in the reference patent that supports claims of those

patents and falls within the scope of claims herein because it would have been obvious to one having ordinary skill in the art to modify claims of the reference by selecting a specifically disclosed embodiment that supports those claims. One of ordinary skill in the art would have been motivated to do this because that embodiment is disclosed as being a preferred embodiment within claims of the reference patent.

***Conclusion***

None of the claims are allowable.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Manjunath N. Rao, Ph.D. whose telephone number is 571-272-0939. The Examiner can normally be reached on 7.00 a.m. to 3.30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Ponnathapura Achutamurthy can be reached on 571-272-0928. The fax phone numbers for the organization where this application or proceeding is assigned is 703-872-9306 for regular communications and for After Final communications.

Application/Control Number: 09/674,477  
Art Unit: 1652

Page 10

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.



Manjunath N. Rao  
May 26, 2004